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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,997	10/07/2003	Stephen Jonathan Brett	W0583.70011 US00	4552
23628	7590	03/29/2005	EXAMINER	
WOLF GREENFIELD & SACKS, PC FEDERAL RESERVE PLAZA 600 ATLANTIC AVENUE BOSTON, MA 02210-2211			MIS, DAVID C	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,997

Applicant(s)

BRETT ET AL.

Examiner

David Mis

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-9, 11-13, 15-19, 21-25 and 29-42 is/are rejected.
7) ☒ Claim(s) 10, 14, 20 and 26-28 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 20 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-4, 6-8, 15-18, 21-24, 29, 33-39 and 42 are rejected under 35 U.S.C. 102(a.) as being clearly anticipated by Magoon et al.

Magoon et al disclosed a variable frequency oscillator core (Fig. 8, 202), an oscillator controller (800), and an output voltage stabilization device (802) for maintaining an amplitude of an oscillator output within a predetermined range (column 11, lines 45-47), wherein the variable frequency oscillator core is controllable to operate in one of a plurality of frequency bands (column 7, lines 23-49) and has a frequency control input responsive to the oscillator controller (column 7, line 50 to column 8, line 16), and where in order to set a new operating frequency the oscillator controller performs a frequency search through the bands (Figure 7, column 9, lines 34 to column 10, line 44) to identify an appropriate band (column 10, lines 40-44) and wherein amplitude stabilization is performed during the frequency search through the bands (column 11, lines 3-10); ... successive approximation ... (column 10, lines 27-40); ... following selection of a frequency band the amplitude of the oscillator is controlled to attain a target value prior to

testing the operating frequency of the oscillator (column 12, lines 6-26); ... series with a current control device ... (Fig. 10, column 12, lines 27-59); ... current sources connected in parallel ... (Fig. 10); ... binary weighted ... (column 12, lines 56-59 and column 7, line 59 to column 8, line 16 which represents a same configuration of the current sources with respect to the capacitors for the same manner of control); ... responsive to a measurement of amplitude of the oscillator ... (column 11, lines 54-56) ... acceptable range ... (column 11, lines 45-47); ... VCO ... (column 5, lines 21-22) ... PLL ... (Fig. 8, 206) ... correction factor ... (Fig. 8, 242); ... only during tuning ... (column 12, lines 8-13); ... mobile telephone ... (columns 1-2, related art).

3. Claims 30, 31 and 40-41 are rejected under 35 U.S.C. 102(a.) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Magoon et al.

In addition to the above, the current sources of Magoon et al (Fig. 10) are presumed to be current mirror type current sources although the details are not shown. It would have been obvious to one of ordinary skill in the art to use current mirror current sources "motivated" to have accurate amounts of current supplied to the oscillator from a stable reference current which results in a stable frequency and which is well known in the art. Magoon et

al said the capacitors were binary weighted and that the current sources may be controlled the same way, as said above.

4. Claims 11-13 are rejected under 35 U.S.C. 102(a.) as being clearly anticipated by Rogers.

Rogers disclosed a variable frequency oscillator (title) in which the current in the oscillator controlling the magnitude of oscillation (abstract) is monotonically increased in steps of a first size (column 7, lines 15-26 and column 8, lines 36-54) until such time as a first target amplitude is exceeded (V_{LO}); once the first target oscillation amplitude is exceeded the current is decremented (V_{LO} is the first target amplitude which is exceeded at V_{HI}) by at least the first step size (column 7, lines 15-26).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the

time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 5, 9, 19, 25 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magoon et al in view of Rogers.

Magoon et al disclosed a variable frequency oscillator core (Fig. 8, 202), an oscillator controller (800), and an output voltage stabilization device (802) for maintaining an amplitude of an oscillator output within a predetermined range (column 11, lines 45-47), wherein the variable frequency oscillator core is controllable to operate in one of a plurality of frequency bands (column 7, lines 23-49) and has a frequency control input responsive to the oscillator controller (column 7, line 50 to column 8, line 16), and where in order to set a new operating frequency the oscillator controller performs a frequency search through the bands (Figure 7, column 9, lines 34 to column 10, line 44) to identify an appropriate band (column 10, lines 40-44) and wherein amplitude stabilization is performed during the frequency search through the bands (column 11, lines 3-10); ... successive approximation ... (column 10, lines 27-40); ... following selection of a frequency band the amplitude of the oscillator is controlled to attain a target value prior to testing the operating frequency of the oscillator (column 12, lines 6-26); ... series

with a current control device ... (Fig. 10, column 12, lines 27-59); ... current sources connected in parallel ... (Fig. 10); ... binary weighted ... (column 12, lines 56-59 and column 7, line 59 to column 8, line 16 which represents a same configuration of the current sources with respect to the capacitors for the same manner of control); ... responsive to a measurement of amplitude of the oscillator ... (column 11, lines 54-56) ... acceptable range ... (column 11, lines 45-47); ... VCO ... (column 5, lines 21-22) ... PLL ... (Fig. 8, 206) ... correction factor ... (Fig. 8, 242); ... only during tuning ... (column 12, lines 8-13); ... mobile telephone ... (columns 1-2, related art).

Magoon et al did not specify that the oscillator current was controlled using a plurality of resistors arranged in parallel, each resistor having an electrically controllable switching device associated with it such that current flow through each resistor can be selectively enabled or inhibited.

Rogers disclosed a variable frequency oscillator (title) in which the current in the oscillator controlling the magnitude of oscillation (abstract) is monotonically increased in steps of a first size (column 7, lines 15-26 and column 8, lines 36-54) until such time as a first target amplitude is exceeded (V_{LO}); once the first target oscillation amplitude is exceeded the current is decremented (V_{LO} is the first target amplitude which is exceeded at V_{HI}) by at least the first step size (column 7, lines 15-26).

Rogers disclosed using a plurality of resistors ($R_{t...}$) arranged in parallel (Fig. 2), each resistor having an electrically controllable switching device

associated with it (Q_t ...) such that current flow through each resistor can be selectively enabled or inhibited (column 2, line 23 to column 6, line 63).

It would have been obvious to one of ordinary skill in the art to have incorporated resistors such as Rogers in the Magoon et al circuit in place of the current sources and "motivated" to improve phase noise performance as said by Rogers (column 5, lines 23-35).

Magoon et al did not specify that the oscillator controller selects the current to flow in the oscillator on the basis of a substantially monotonically increasing change in current until the correct amplitude is reached.

Rogers

Rogers disclosed a variable frequency oscillator (title) in which the current in the oscillator controlling the magnitude of oscillation (abstract) is monotonically increased in steps of a first size (column 7, lines 15-26 and column 8, lines 36-54) until such time as a first target amplitude is exceeded (V_{LO}); once the first target oscillation amplitude is exceeded the current is decremented (V_{LO} is the first target amplitude which is exceeded at V_{HI}) by at least the first step size (column 7, lines 15-26).

It would have been obvious to one of ordinary skill in the art to have incorporated the monotonic current control system of Rogers in place of the search tree current control system of Magoon et al "motivated" to enhance performance as said by Rogers (column 5, lines 23-35) where not only are the resistors used but also the arrangement "motivated" to arrive at an

appropriate amplitude using some form of control circuitry (Rogers column 4, lines 37-46).

Magoon et al did not specify that one current mirror may be permanently on. The Rogers arrangement allowed for this (column 5, lines 42-59), which arrangement may have been incorporated as said above.

8. Claim 35 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite since:

In claim 35 and in claim 36, there is no antecedent basis in parent claim 34 for the "control signal modifier".

9. Claims 10, 14, 20 and 26-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Mis whose telephone number is (571)272-1765. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Mis
Primary Examiner
Art Unit 2817